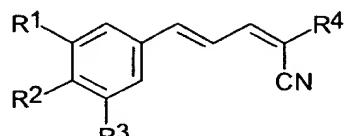


We claim:

1. A compound of Formula I, and salts, solvates or hydrates thereof:



5

I

wherein

- R¹ and R² are each independently selected from the group consisting of H, OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, O-Si(C₁₋₆alkyl)(C₁₋₆alkyl)(C₁₋₆alkyl), NO₂, CF₃, OCF₃ and halo;
- 10 R³ is selected from the group consisting of H, OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, O-Si(C₁₋₆alkyl)(C₁₋₆alkyl)(C₁₋₆alkyl), NO₂, halo and CH₂-S-(CH₂)_n Ar;
- 15 R⁴ is selected from the group consisting of C(X)R⁵, SO₃Ar, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), P(O)(OH)₂, P(O)(OC₁₋₆alkyl)₂, and C(NH₂)=C(CN)₂;
- X is selected from O, S, NH and N-C₁₋₆alkyl;
- 20 R⁵ is selected from the group consisting of NH₂, OH, NH(CH₂)_pAr, NH(CH₂)_pOH, (CH₂)_pOC₁₋₆alkyl, C₁₋₆alkyl, C₁₋₆alkoxy, NHNNH₂, NHC(O)NH₂, NHC(O)C₁₋₆alkoxy, N-morpholino and N-pyrrolidino; and
- 25 Ar is an aromatic or heteroaromatic group, unsubstituted or substituted with 1-4 substituents, independently selected from the group consisting of OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, NO₂, CF₃, OCF₃ and halo;
- n is 0 to 4; and
- p is 1-4.

2. The compound according to claim 1, wherein R¹ and R² are each independently selected from the group consisting of H, OH, C₁₋₄alkyl, C₁₋

$\text{C}_{1-4}\text{alkoxy}$, NH_2 , $\text{NH-C}_{1-4}\text{alkyl}$, SH , $\text{S-C}_{1-4}\text{alkyl}$, $\text{O-Si}(\text{C}_{1-4}\text{alkyl})(\text{C}_{1-4}\text{alkyl})(\text{C}_{1-4}\text{alkyl})$, NO_2 , CF_3 , OCF_3 and halo.

3. The compound according to claim 2, wherein R^1 and R^2 are each independently selected from the group consisting H, OH, OCH_3 , $\text{O-Si}(\text{CH}_3)_2(\text{tBu})$, S-Me, SH and NO_2 .
4. The compound according to claim 3, wherein R^1 and R^2 are both OH or R^1 and R^2 are both OCH_3 .
5. The compound according to claim 4, wherein R^1 is OCH_3 and R^2 is OH.
6. The compound according to claim 1, wherein R^3 is selected from the group consisting of H, OH, $\text{C}_{1-4}\text{alkyl}$, $\text{C}_{1-4}\text{alkoxy}$, NH_2 , $\text{NH-C}_{1-4}\text{alkyl}$, $\text{N}(\text{C}_{1-4}\text{alkyl})(\text{C}_{1-4}\text{alkyl})$, SH, $\text{S-C}_{1-4}\text{alkyl}$, NO_2 and halo.
7. The compound according to claim 6, wherein R^3 is selected from the group consisting of H, OH, OCH_3 , SH, SMe, NO_2 and halo.
8. The compound according to claim 7, wherein R^3 is selected from the group consisting of H, OH and OCH_3 .
9. The compound according to claim 1, wherein R^4 is selected from the group consisting of $\text{C}(\text{X})\text{R}^5$ and $\text{C}(\text{NH}_2)=\text{C}(\text{CN})_2$.
10. The compound according to claim 9, wherein R^4 is $\text{C}(\text{X})\text{R}^5$.
11. The compound according to claim 10, wherein X is selected from the group consisting of O and S.
12. The compound according to claim 10, wherein R^5 is selected from the group consisting of NH_2 , OH, $\text{NH}(\text{CH}_2)_p\text{Ar}$, $\text{NH}(\text{CH}_2)_p\text{OH}$ and $\text{C}_{1-4}\text{alkoxy}$.

13. The compound according to claim 12, wherein p is 1-3.
14. The compound according to claim 13, wherein R⁵ is selected from the group consisting of NH₂, OH, NH(CH₂)_pAr, NH(CH₂)_pOH and OCH₃.
5
15. The compound according to claim 14, wherein p is 1-2.
16. The compound according to claim 1, wherein Ar is an unsubstituted phenyl group or a phenyl group substituted with 1-4 substituents optionally selected from the group consisting of OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, NO₂, CF₃, OCF₃ and halo.
10
17. The compound according to claim 14, wherein Ar is an unsubstituted phenyl group or a phenyl group substituted with 1-4 substituents optionally selected from the group consisting of OH, C₁₋₆alkyl, C₁₋₆alkoxy, NH₂, NH-C₁₋₆alkyl, N(C₁₋₆alkyl)(C₁₋₆alkyl), SH, S-C₁₋₆alkyl, NO₂, CF₃, OCF₃ and halo.
15
18. The compound according to any of claims 16 or 17, wherein Ar is an unsubstituted phenyl group or phenyl group substituted with 1-2 substituents optionally selected from the group consisting of OH, C₁₋₄alkyl, C₁₋₄alkoxy, NH₂, NH-C₁₋₄alkyl, N(C₁₋₄alkyl)(C₁₋₄alkyl), SH, S-C₁₋₄alkyl, NO₂, CF₃, OCF₃ and halo.
20
19. The compound according to claim 18, wherein Ar is an unsubstituted phenyl group or phenyl group substituted with 1-2 substituents optionally selected from the group consisting of OH, OCH₃, NH₂, NHCH₃, N(CH₃)₂, SH, SCH₃, CF₃, OCF₃ and halo.
25
20. The compound according to claim 19, wherein Ar is selected from the group consisting of phenyl and 3,4-dihydroxyphenyl.
30

21. The compound according to claim 1, selected from the group consisting of:

(E,E)-2-(benzylamido)-3-styrylacrylonitrile (CR1);
(E,E)-2-(benzylamido)-3-(3,4-dimethoxystyryl)acrylonitrile (CR2);
(E,E)-2-(benzylamido)-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR3);
(E,E)-2-(benzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile (CR4);
(E,E)-2-(phenylethylamido)-3-(3,4-dimethoxystyryl)acrylonitrile (CR5);
(E,E)-2-(phenylethylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR8);
(E,E)-2-(phenylpropylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR9);
(E,E)-2-(3,4-dihydroxybenzylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR11);
15 ^ (E,E)-2-thioacetamido-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR12);
(E,E)-2-acetamido-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR13);
(E,E)-2-carboxy-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile (CR14);
20 (E,E)-2-carbomethoxy-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR15);
x (E,E)-2-acetamido-3-[3,4-bis(t-
butyldimethylsilyloxy)styryl]acrylonitrile(CR16);
y (E,E)-2-acetamido-3-(3,4-dihydroxystyryl)acrylonitrile (CR17);
25 x (E,E)-2-(benzylamido)-3-(3,4-bis(t-
butyldimethylsilyloxy)styryl)acrylonitrile (CR18);
(E,E)-2-(3,4 dihydroxybenzylamido)-3-styrylacrylonitrile (CR19);
y (E,E)-2-(3,4 dihydroxybenzylamido)-3-[3,4-bis(t-
butyldimethylsilyloxy)styryl]acrylonitrile (CR20);
30 (E,E)-2-(3,4 dihydroxybenzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile
(CR21);

(*E,E*)-2-(β -ethanolamido)-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR24);
(*E,E*)-2-(benzylamido)-3-(4-nitrostyryl)acrylonitrile (CR27);
(*E,E*)-2-(3,4-dihydroxybenzylamido)-3-(4-nitrostyryl)acrylonitrile(CR28);
5 and
(*E,E*)-2-(1-amino-2,2-dicyanoethenyl)-3-(4-nitrostyryl)acrylonitrile
(CR29).

10 22. The compound according to claim 21, selected from the group
consisting of:

15 (*E,E*)-2-(benzylamido)-3-styrylacrylonitrile (CR1);
(*E,E*)-2-(benzylamido)-3-(3,4-dimethoxystyryl)acrylonitrile (CR2);
(*E,E*)-2-(benzylamido)-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR3);
20 (*E,E*)-2-(benzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile (CR4);
(*E,E*)-2-(phenylethylamido)-3-(3,4-dimethoxystyryl)acrylonitrile (CR5);
(*E,E*)-2-(phenylpropylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR9);
(*E,E*)-2-(3,4-dihydroxybenzylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR11);
25 > (*E,E*)-2-thioacetamido-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR12);
(*E,E*)-2-acetamido-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR13);
(*E,E*)-2-carboxy-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile (CR14);
30 (*E,E*)-2-carbomethoxy-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR15);
(*E,E*)-2-acetamido-3-(3,4-dihydroxystyryl)acrylonitrile (CR17);
(*E,E*)-2-(3,4 dihydroxybenzylamido)-3-styrylacrylonitrile (CR19);
35 (*E,E*)-2-(3,4 dihydroxybenzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile
(CR21); and

(*E,E*)-2-(β -ethanolamido)-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile (CR24).

23. The compound according to claim 22, selected from the group
5 consisting of:

(*E,E*)-2-(benzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile (CR4);

(*E,E*)-2-(3,4-dihydroxybenzylamido)-3-(3,5-dimethoxy-4-
hydroxystyryl)acrylonitrile (CR11);

(*E,E*)-2-acetamido-3-(3,4-dihydroxystyryl)acrylonitrile (CR17);

(*E,E*)-2-(3,4 dihydroxybenzylamido)-3-styrylacrylonitrile (CR19);

(*E,E*)-2-(3,4 dihydroxybenzylamido)-3-(3,4-dihydroxystyryl)acrylonitrile
10 (CR21); and

15 *(E,E)*-2-(β -ethanolamido)-3-(3,5-dimethoxy-4-hydroxystyryl)acrylonitrile
(CR24).

24. The compound (*E,E*)-2-(benzylamido)-3-(3,4-dihydroxystyryl)
acrylonitrile (CR4).

25. The compound (*E,E*)-2-(3,4-dihydroxybenzylamido)-3-(3,5-dimethoxy-
20 4-hydroxystyryl)acrylonitrile (CR11).

26. The compound (*E,E*)-2-(3,4-dihydroxybenzylamido)-3-(3,5-dimethoxy-
4-hydroxystyryl)acrylonitrile (CR11).

27. A composition comprising a compound according to claim 1 in
25 admixture with a pharmaceutically acceptable diluent or carrier.

28. A method of modulating cell proliferation comprising administering an
effective amount of a compound of claim 23 to modulate cell proliferation to a
30 cell or animal in need thereof.

29. A method of inhibiting cell proliferation comprising administering an effective amount of a compound of claim 23 to inhibit cell proliferation to a cell or animal in need thereof.
- 5 30. The method of claim 29, wherein the cell proliferation that is inhibited is cancer cell proliferation.
31. A method of treating cancer comprising administering to an animal in need thereof an effective amount of a compound of claim 23.
- 10 32. The method of claim 30 or 31 wherein said cancer is a hematopoietic cell cancer.
- 15 33. The method of claim 30 or 31 wherein said cancer is a leukemia, a lymphoma, a myeloma or a carcinoma.
- 20 34. The method of claim 33 wherein said leukemia is acute lymphoblastic leukemia, aggressive Philadelphia+ leukemia, acute myelocytic leukemia, chronic myeloid leukemia, chronic lymphocytic leukemia or juvenile myelomonocyte leukemia.
35. The method of claim 34 wherein said leukemia is acute lymphoblastic leukemia.
- 25 36. A method of modulating cell proliferation comprising administering an effective amount of a compound capable of modulating cell proliferation according to claim 1 or a composition of claim 27 to a cell or animal in need thereof.
- 30 37. A method of inhibiting cell proliferation comprising administering an effective amount of a compound capable of inhibiting cell proliferation

according to claim 1 or a composition according to claim 27 to a cell or animal in need thereof.

38. A method of inhibiting cancer cell proliferation comprising administering
5 an effective amount of a compound capable of inhibiting cancer cell proliferation according to any one of claim 1 or a composition according to claim 27 to a cell or animal in need thereof.
39. A method of treating cancer comprising administering an effective
10 amount of a compound capable of inhibiting cancer cell proliferation according to claim 1 or a composition according to claim 27 to a cell or animal in need thereof.
40. A method according to claim 38 or 39 wherein said cancer is a
15 hematopoietic cell cancer.
41. A method according to claim 38 or 39 wherein said cancer is a leukemia, a lymphoma, a myeloma or a carcinoma.
- 20 41✓ A method according to claim 41 wherein said leukemia is acute lymphoblastic leukemia, aggressive Philadelphia+ leukemia, acute myelocytic leukemia, chronic myeloid leukemia, chronic lymphocytic leukemia or juvenile myelomonocyte leukemia,
- 25 43. A method according to claim 42 wherein said leukemia is acute lymphoblastic leukemia.